

**The Congestion Mitigation and Air Quality
Improvement (CMAQ) Program Guidance and
Procedures for Connecticut's MPOs/Rural COGs**
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Introduction

This document was created for the State's Metropolitan Transportation Organizations (MPOs) and the Rural Councils of Governments (COGs) to assist their member municipalities and eligible organizations that are interested in the Congestion Mitigation and Air Quality (CMAQ) Improvement Program as a potential funding source. This document provides information on the CMAQ Program, outlines the procedures used by the Connecticut Department of Transportation (the Department) to select projects that are eligible for CMAQ funding, and provides instructions for completing the Department's CMAQ application. The goal of the Department's CMAQ Program for the MPOs/Rural COGs is to deliver quality projects on budget that expand or initiate transportation services with air quality benefits for the State of Connecticut.

The CMAQ Program is a Federal program that funds transportation projects and programs that contribute to the attainment or maintenance of National Ambient Air Quality Standards (NAAQS) in non-attainment or air quality maintenance areas for ozone, carbon monoxide, or particulate matter under provisions in the Clean Air Act (CAA), Title 42, United States Code. The CMAQ Program was established by the 1991 Federal Intermodal Surface Transportation Efficiency Act (ISTEA) and was reauthorized with subsequent transportation bills including the more recent Fixing America's Surface Transportation (FAST) Act.

As a non-attainment area for ozone and an attainment/maintenance area for particulate matter (PM_{2.5}), Connecticut receives Federal CMAQ Improvement Program funds based on the population in the non-attainment and maintenance areas of the state and the severity of air quality problems. As shown in Figure 1, Connecticut has two separate non-attainment areas for the 8-hour ozone standard, embodying the entire state. The Greater Connecticut area is classified as serious non-attainment for the 2008 NAAQS and marginal non-attainment for the 2015 NAAQS and consists of Hartford County, Litchfield County, New London County, Tolland County, and Windham County. The Connecticut portion of the New York/Northern New Jersey/Long Island, NY-NJ-LI area is also classified as serious non-attainment for the 2008 NAAQS and moderate non-attainment for the 2015 NAAQS and consists of Fairfield County, Middlesex County, and New Haven County. In addition and shown in Figure 2, Fairfield and New Haven Counties were part of the New York/Northern New Jersey/Long Island, NY-NJ-LI non-attainment area for PM_{2.5}. Effective October 24, 2013, the Connecticut portion of the NY-NJ-LI area was re-designated to attainment when the U.S. Environmental Protection Agency (EPA) approved Connecticut's maintenance plan that ensures continued attainment through the year 2025. Attachment B contains an air emissions glossary describing targeted pollutants in the country along with their health effects.

FIGURE 1

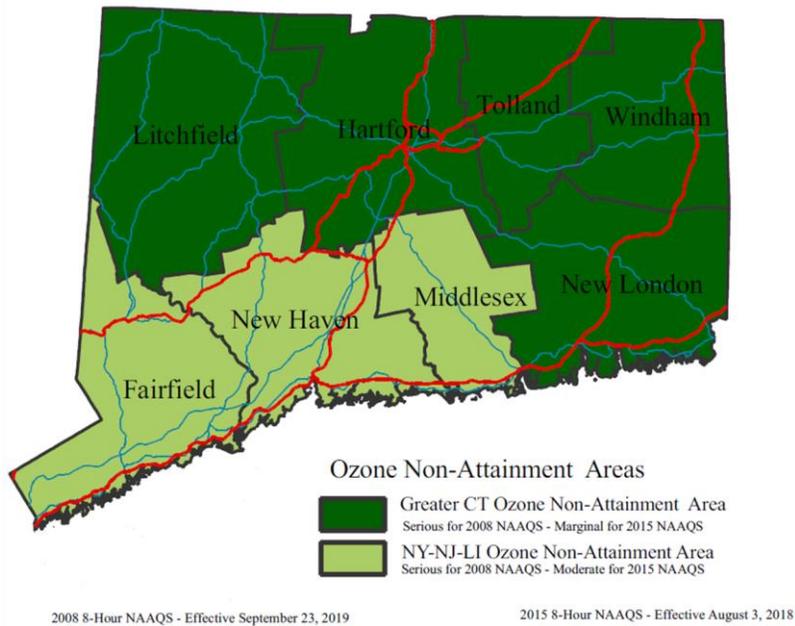
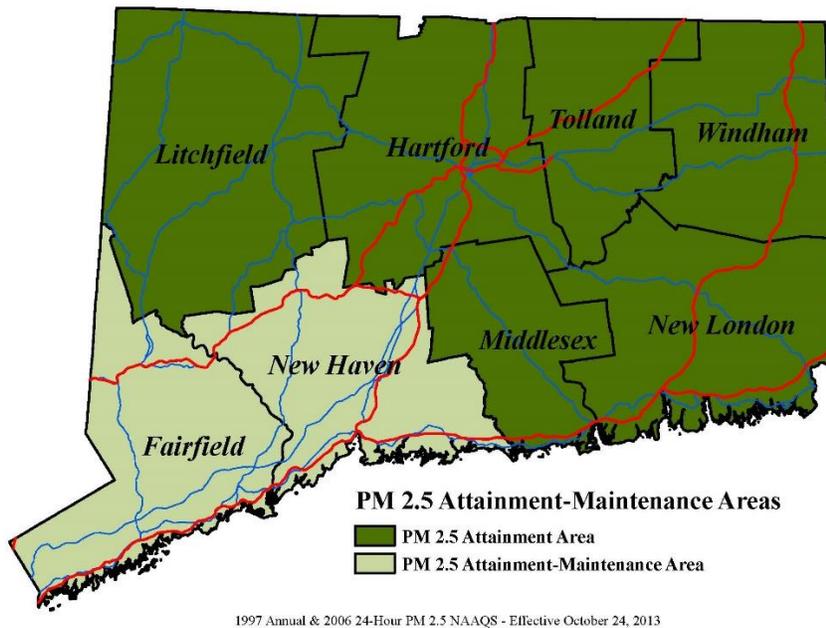


FIGURE 2



Eligibility Criteria

FHWA's Interim Program Guidance is quite comprehensive and discusses all aspect of the CMAQ program. Please review this guidance before developing project proposals to ensure that the desired activities are CMAQ-eligible. In addition to the Interim Program Guidance, the FHWA has issued a number of guidance documents on specific issues, such as eligibility of freight projects and diesel retrofit programs. All of these guidance documents are available on FHWA's website at:

http://www.fhwa.dot.gov/environment/air_quality/cmaq/policy_and_guidance/

A wide variety of projects and programs are eligible for CMAQ funding. The principal requirement for determining project eligibility through the CMAQ program is that the proposed CMAQ project be located within a non-attainment area or attainment area with a maintenance plan (maintenance area) for a national ambient air quality standard, and produce a reduction of mobile on-road emissions for the pollutant or precursor of concern. Furthermore, since the CMAQ program is funded by the FHWA, all CMAQ projects must follow Federal laws and regulations. CMAQ projects and programs fall into one of the following general project types:

- Diesel Engine Retrofits & Other Advanced Truck Technologies
- Transportation Control Measures (TCMs)
- Extreme Low-Temperature Cold Start Programs
- Transit Improvements
- Transportation Management Associations
- Carpooling and Vanpooling
- Carsharing
- Training
- Congestion Reduction & Traffic Flow Improvements
- Travel Demand Management
- Pedestrian and Bicycle Facilities and Programs
- Public Education and Outreach Activities
- Freight/Intermodal
- Idle Reduction
- Inspection/Maintenance (I&M) Programs
- Innovative Projects
- Alternative fuel and vehicles

FHWA's Interim Program Guidance provides an explanation of the types of projects likely to be implemented in each of the categories and a list of ineligible activities. Basically, each CMAQ project must meet three criteria: it must be a transportation project, it must generate an emissions reduction, and it must be located in or benefit a non-attainment or maintenance area.

Other Eligibility Considerations

In addition to federal eligibility requirements, the following is a list of additional guidelines for the Department's CMAQ Program for the MPOs/Rural COGs, which are utilized when considering project proposals for funding:

- 1.** Applicants must submit, with their completed applications, letters of commitment or resolutions to identify who will own, operate and maintain the project after it is completed, and for all matching funds. Failure to submit these letters will cause the project to be dropped from consideration.
- 2.** The Department's System Engineering Analysis FORM (SEAFORM) must be completed and submitted with the applications for all ITS projects. This form can be found at the following link under Other Resources:

<https://portal.ct.gov/DOT/Bureau-of-Highway-Operations/Highway-Ops-ITS-Engineering--Support>

- 3.** All candidate project proposals require endorsement by the associated MPO/Rural COG. Endorsement can be in the form of a letter of support or a resolution. A single letter or resolution endorsing all candidate project proposals within the MPO/Rural COG is acceptable.
- 4.** The Department will not accept candidate project proposals directly from individual localities or project sponsors. All candidate project proposals must be submitted through the MPO/Rural COG.
- 5.** Operating cost for certain types of CMAQ projects are eligible for funding and is limited to three years' worth of federal funding. With MAP-21, the 3 years of operating assistance allowable under the CMAQ program may now be spread over a longer period, for a total of up to 5 sequential years of support. Projects which fall into this category must include a plan for continuing the service beyond the operation assistance years. This should indicate what the planned source of funds will be that will supplant CMAQ funding, and/or how the service will become self-supporting.
- 6.** Project scopes submitted cannot be modified after a project has been selected for funding, as the new scope may impact the cost effectiveness criteria.
- 7.** Lack of progress on a project may result in the project being cancelled by the Department and possibly disqualify project sponsors from future solicitations
- 8.** Project sponsors will be responsible for carrying out any required studies and/or obtaining necessary permits and approvals, including but not limited to historic and archaeological surveys and reports, state inland wetland and tidal wetland permits, and Coastal Area Management and Corps of Engineers permits.
- 9.** Selected projects will be administered as federal-aid projects. As such, project sponsors must comply with all federal requirements, including but not limited to Disadvantage Business Enterprise contract set-asides, consultant selection

procedures, and the competitive bid process. Please refer to the Department's website using the following link for additional guidance on overseeing a variety of federal and state-funded improvements on town-owned roadways that are designed by municipal staff or consultants retained by the municipality:

<http://www.ct.gov/dot/cwp/view.asp?a=2303&q=300830>

- 10.** Projects must be designed to conform to the American with Disabilities Act requirements including the use of Public Right-of-Way Guidelines (PROWAG) as a best practice.
- 11.** All projects must be constructed to federal standards with the estimated cost in the application reflecting those standards.

Project Selection Process

This section of the document provides information on the Department's selection process that includes information on funding considerations, oversight and administration cost, cost overruns, the solicitation process, solicitation schedule, and project selection criteria.

Funding Considerations

For each solicitation, which typically covers a two-year period, the Department earmarks \$12 million each year in CMAQ funds, prior to matching requirements, to fund CMAQ project proposals from the MPOs/Rural COGs. This amount will be reviewed for each solicitation period on the basis of funds provided and projects programmed.

Generally, the Federal share for CMAQ projects under this program is 80%. Projects that qualify for 100% federal funding will be funded with 100% federal share. The project sponsor is responsible for the local share for all phases. Total project cost should be between \$200,000 and \$4 million. The total cost of the project (federal and local share) includes design, ROW acquisition, construction engineering, and operating cost if applicable. Non-construction projects, such as purchasing equipment, must have a total cost of at least \$50,000 (\$40,000 federal share).

The funds provided by this program are on a cost reimbursement basis. The CMAQ Program is not a grant program. The sponsor does not receive grant funds to start the project; rather, the sponsor is reimbursed for costs incurred after receiving funding authorization for the project and a notice to proceed. Cost incurred prior to project selection and a notice to proceed will not be reimbursed.

Oversight & Administration Costs

Under PE, the DOT project oversight and administration costs do not draw down from the award amount. CMAQ funds from outside of the solicitation program are used for these costs.

Under CN, the DOT oversight and administration costs do draw down from the award amount. These costs primarily include the MSAT functions for billing and reimbursement. DOT oversight costs are very small, and every attempt is made to keep those necessary costs reasonable.

Cost Overruns

Cost overruns on selected projects, whether due to poor estimates or unforeseen circumstances, will be the responsibility of the project sponsors; therefore, good cost estimating is critical, and **applicants should not expect additional funding from the program or the ability to change the scope**. The latest Department weighted unit bid prices for project cost should be used. The Department's cost estimating guidelines can be located at the following website:

<https://portal.ct.gov/DOT/Engineering-Applications/Submissions---Cost-Estimating>

Solicitation Process

The Department will solicit projects from all the MPOs/Rural COGs. The MPOs/Rural COGs will be responsible for soliciting and prioritizing projects from stakeholders located within their boundaries. Each MPO/Rural COG should review and verify project eligibility for CMAQ funding. Using its own ranking process, each MPO/Rural COG must then submit its top **applications** to the Department in priority order based on the criteria below:

- MPOs/Rural COGs with up to 10 member towns – 3 applications
- MPOs/Rural COGs with 11-20 member towns – 4 applications
- MPOs/Rural COGs with 21 + member towns – 5 applications

The MPOs/Rural COGs board must endorse the list of prioritized projects. Project applications received that are incomplete or deemed ineligible will not be considered.

For transit projects, the organization proposing the project must either be a designated grant recipient with the Federal Transit Administration (FTA) or there must be a designated grant recipient willing to apply on their behalf. Although private and non-profit groups may apply, the Department will only enter into an agreement with a public agency to fund CMAQ projects. Therefore, a private or non-profit entity applying for CMAQ funds must coordinate with its respective municipality or another appropriate public sponsor.

The Department’s CMAQ application (Attachment C) must be used by project sponsors to provide project and applicant information. All applications, including all supporting documentation, must be submitted via email to the Bureau’s contact person for the CMAQ program for eligibility review and rating. Incomplete applications will not be considered. The CMAQ Program Contact information is in Attachment A. Each project proposal received will be screened for eligibility, feasibility and reasonable cost estimates. Those proposals that meet the screening requirements will be analyzed for air quality benefits by the Department’s Travel Demand and Air Quality Modeling unit. The project will then be evaluated and prioritized by the Department using the Department’s project rating criteria.

A copy of the application along with the emissions report for those projects that are selected for funding will then be submitted to the USDOT for final eligibility determination and approval. Project proposals that are eligible for the CMAQ program but not selected for funding can be resubmitted for consideration in a future solicitation. Projects that are determined to be eligible by FHWA will be advanced to scoping.

Solicitation Schedule

Project sponsors will be provided three years within which to prepare their projects for obligation after the project has been selected for funding by the Department’s selection committee. If funding for a project is not obligated within this three-year period, then the project sponsor will not be allowed to submit a project for the next round of solicitation. Project sponsors may be able to request time extension due to extenuating circumstances.

Project Selection Criteria

All proposed projects from the MPOs/Rural COGs utilizing CMAQ funding will be rated using the project rating criteria described below. Cost effectiveness is the primary measure that will be used in the project selection process to establish priority. Projects that provide the most cost-effective emissions reductions will be the most competitive and will rank highest overall – increasing the likelihood of being funded.

Criteria are shown with the maximum points that could be awarded. Each project can earn up to a maximum of 100 Points based on the following three criteria: cost effectiveness, regional rankings and operation and maintenance plan. Project proposals will be awarded points based on a sliding scale of zero to the maximum points allowed. Two of the three criteria are provided with a table containing a sliding scale as a guide for ranking CMAQ projects.

Rating Criteria

- | | |
|------------------------------------------|---------------------------|
| 1. Cost Effectiveness | 60 points maximum |
| 2. Regional Rankings | 20 points maximum |
| 3. Operation and Maintenance Plan | 20 points maximum |
| Total Possible Points: | 100 points maximum |

1. **Cost Effectiveness (up to 60 points):** Cost effectiveness will be assessed on the basis of annualized project cost/annual emission benefits. The cost used in this calculation will be limited to the federal share of the project. The cost/benefits ratio will be measured against all of the other applications by rank with the best ratio ranking first. Points will then be assigned to the top ten projects as follows:

1	2	3	4	5	6	7	8	9	10
60	55	50	45	35	30	25	20	15	10

2. **Regional Rankings (up to 20 points):** Projects will be given points based on the priority ranking by the MPOs/Rural COGs. The regional ranking points will be assigned as identified below:

Rank	Points
1	20
2	16
3	12
4	8
5	4

3. **Operation and Maintenance Plan (up to 20 points):** A proposal can only be effective if the agencies responsible for permitting, implementing, operating and maintaining the project have agreed to advance it. Points will be awarded based on the sponsor’s commitment to operate and manage the project/program beyond the construction and/or implementation stage. **For ITS projects, a completed System Engineering Analysis FORM (SEAFORM) is required with the applications.**

ATTACHMENT A

CMAQ Program Contacts

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ATTACHMENT B

Air Emissions Glossary

Carbon Monoxide (CO) - Carbon monoxide is a colorless, odorless gas produced whenever incomplete fuel combustion occurs. In the United States, more than two-thirds of the carbon monoxide emissions come from transportation sources. In urban areas, motor vehicle contributions to carbon monoxide pollution can exceed ninety percent.

When inhaled, the gas forms carboxyhemoglobin, a compound that disrupts normal respiration by inhibiting the transfer of oxygen to specialized blood cells that transport the oxygen throughout the body. Symptoms from exposure include impairments in visual perception, manual dexterity, learning functions and the ability to perform complex tasks. Sensitive individuals, such as infants, the elderly or respiratory patients may be highly susceptible to acute symptoms of carbon monoxide poisoning.

Particulate Matter (PM₁₀ and PM_{2.5}) - Particulate matter consists of airborne solid particles and liquid droplets. These particles are classified as "coarse" if they are smaller than 10 microns or "fine" if they are smaller than 2.5 microns. Coarse airborne particles are produced during grinding operations or from the physical disturbance of dust by natural air turbulence processes, such as wind. Fine particles can be a byproduct of fossil fuel combustion, such as diesel and bus engines.

Fine particles can easily reach remote lung areas, and their presence in the lungs is linked to serious respiratory ailments such as asthma, chronic bronchitis and aggravated coughing. Exposure to these particles may aggravate other medical conditions such as heart disease and emphysema and may cause premature death. In the environment, particulate matter contributes to diminished visibility and particle deposition (soiling).

Ozone (O₃) - Ozone is a chemically unstable molecule composed of three oxygen atoms. Ground level ozone is formed by sunlight and heat acting upon fuel combustion by products such as nitrogen oxides and hydrocarbons. Ozone occurs naturally in the upper atmosphere and shields the Earth from ultraviolet radiation. However, at ground level, ozone is a severe irritant and the primary component of "smog". In urban areas, at least half of the ozone producing components comes from transportation sources such as automobiles. Because ozone formation is directly related to atmospheric temperatures, problematic ozone levels occur most frequently on hot summer afternoons.

Ozone exposure is linked to respiratory illnesses such as asthma and lung inflammation. Extended ozone exposure can exacerbate existing respiratory ailments such as chronic bronchitis and emphysema. Ozone pollution can severely damage vegetation including agricultural crops and forest habitats.

Nitrogen Oxides (NO_x) - Nitrogen oxides form when nitrogen and oxygen atoms chemically react inside the high pressure and temperature conditions in an engine. Nitrogen oxides are precursors for ozone, and in the environment, they contribute to the formation of acidic rain.

Hydrocarbons (HC) or Volatile Organic Compounds (VOC) - Hydrocarbon emissions are a product of partial fuel combustion, fuel evaporation and refueling losses caused by spillage and vapor leakage. Hydrocarbons react with nitrogen oxides and sunlight to form ozone. Some hydrocarbons are toxic and may be carcinogenic.

ATTACHMENT C

CTDOT's CMAQ Application

Fillable application available in separate document